Treći ENERGETSKI SAMIT u Bosni i Hercegovini

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Treći ENERGETSKI SAMIT u Bosni i Hercegovini

Introduction to the (bio)energy sector of B&H

Form of Government:	Republic
Governmental System:	Parliamentary democracy
Area:	51,209 km^2; a total of 1,538 km of shared borders with Croatia (932 km), Montenegro (249 km), Serbia (357 km)
Population:	3.8 million
Capital:	Sarajevo (population of some 400,000)
Administration:	Federation of Bosnia and Herzegovina (10 cantons, 79 municipalities), Republika Srpska (63 municipalities) and Brčko District
GDP (2012):	EUR 13.1 billion
Per capita GDP (2012):	EUR 3,419
Currency:	Convertible mark (ISO-code: BAM), BAM/EUR = 1.956 - BAM/USD = 1.87

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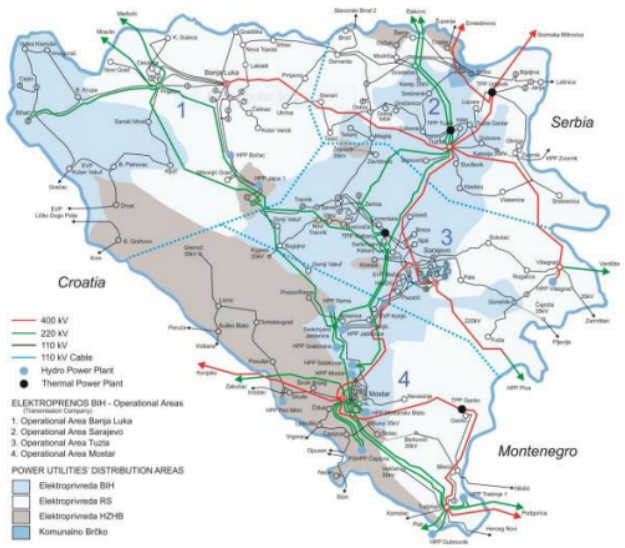
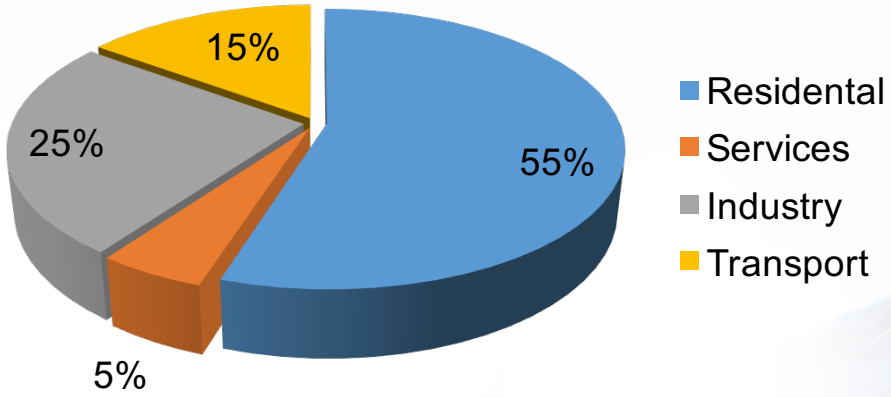
Content

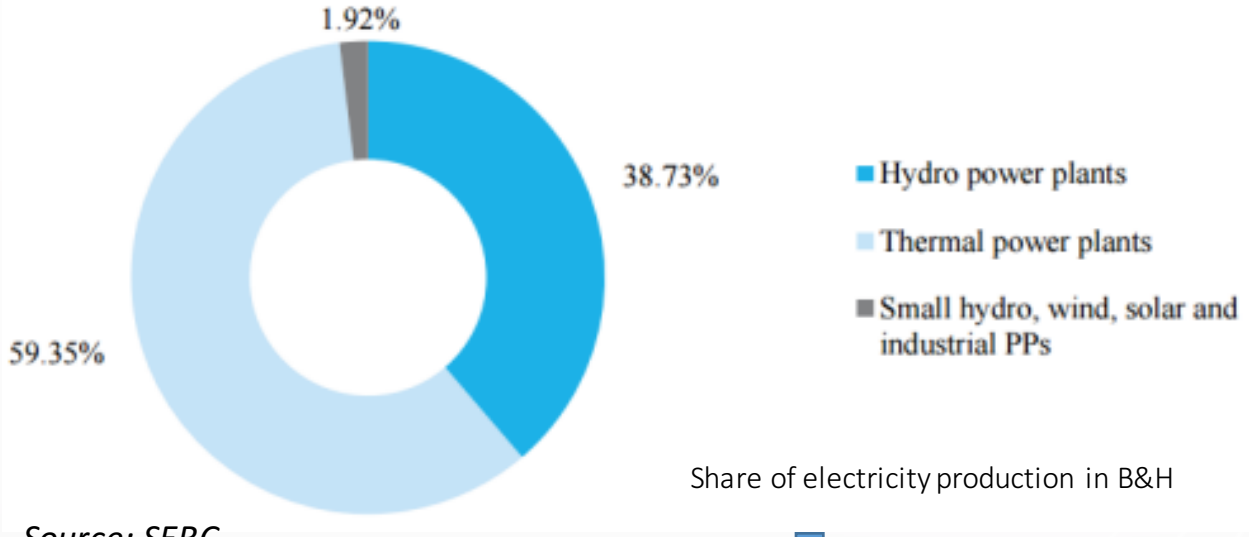
- B&H Energy balance
- Overall RES target for B&H
- RES incentives issues
- B&H RES progress and trajectories
- Overview of the ***BIOENERGY*** sector of B&H
- Introduction to the PANEL

B&H Energy balance





estimate **Total energy consumpiton in B&H** **140 PJ/a**



Share of electricity production in B&H

32,4 %

Source: SERC

Total electricity consumpiton in B&H (2015) **45,4 PJ/a**

RES segment/strategy/targets

Overall target for the share of energy from renewable sources in gross final consumption of energy in for the baseline year and 2020, for Bosnia and Herzegovina

Share of energy from renewable sources in gross final consumption of energy in 2009	**34.0 %**
Target share of energy from renewable sources in gross final energy consumption in 2020	**40.0 %**
Expected total adjusted energy consumption in 2020	**4851.3 (ktoe)**
Expected amount of energy from renewable sources corresponding to the 2020 target	**1940.5 ktoe**

Source: B&H NREAP

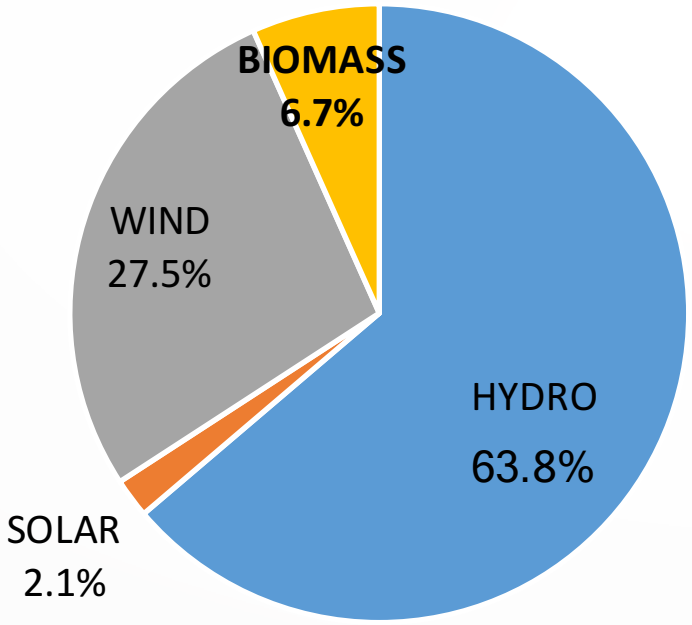
B&H Energy targets for 2020

	GFEC	RES		
Sector	**ktoe**	**ktoe**	**GWh**	**%**
Heating and cooling	2.069,8	1.085,2	12.660,7	52,4%
Electricity	1.303,6	741,4	8.649,7	56,9%
Transport	1.129,1	113,9	1.328,8	10,1%
Gross Final Energy Consumption	4.851,3	1.940,5	22.639,2	40,0%

Current incentive

Source: B&H NREAP

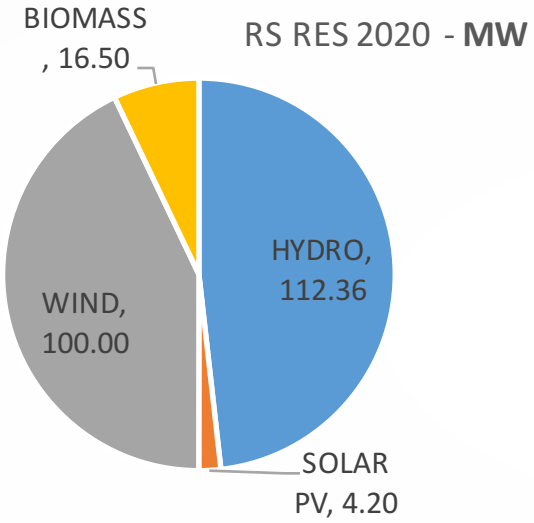
Share of RES Tehnologies for incetives in B&H

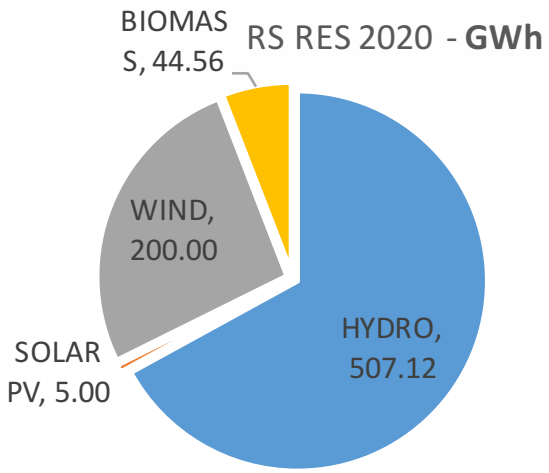


Source: B&H NREAP

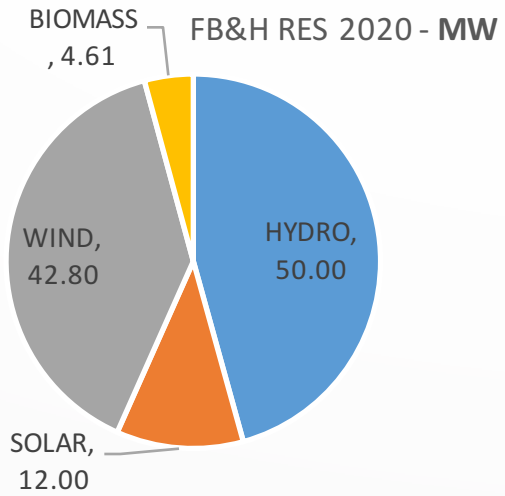
B&H RES 2020		
RES Technology	MW	GWh
HYDRO	162,36	712,12
SOLAR	16,20	23,00
WIND	142,80	307,00
BIOMASS	21,12	74,56
Total	**342,48**	**1.116,68**

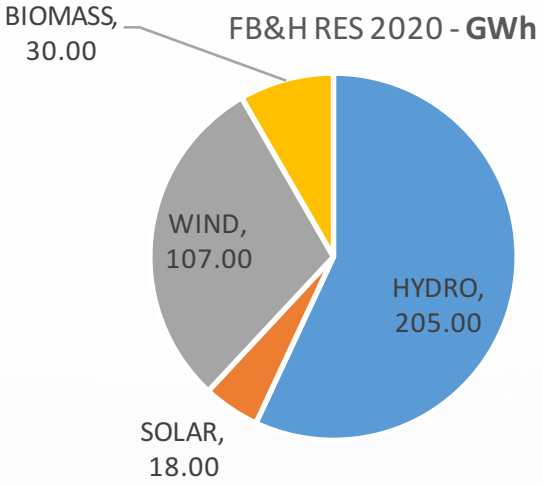
Share of RES Tehnologies for incetives in BH entities





Republika Srpska – RES 2020		
RES Technology	MW	GWh
HYDRO	112,36	507,12
SOLAR	4,20	5,00
WIND	100,00	200,00
BIOMASS	16,50	44,56
Total	**233,06**	**756,68**





Federation of B&H – RES 2020		
RES Technology	MW	GWh
HYDRO	50,00	205,00
SOLAR	12,00	18,00
WIND	42,80	107,00
BIOMASS	4,62	30,00
Total	**109,42**	**360,00**

Source: B&H NREAP

RES for incentives

- Total for incentive: **1.116,68 GWh**
- Total share of RES in 2020: **22.639,2 GWh**

Total for incentives: **4,93%**

RES	Baseline	2020
Electricity (ktoe)	495,2	741,4
Electricity (GWh)	5.779,0	8.652,1

2020	GWh
Share of RES electricity	2.873,4
RES for incentive	1.116,7

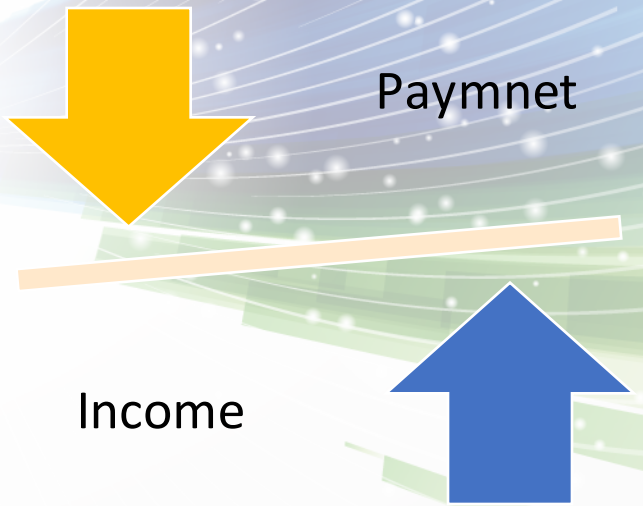
39%

Source for *incentives* - RES Levy

Unint price for RES Levy (end of 2016)	pf/kWh	KM/kWh
FB&H	0,11	0,00105696
RS	0,25	0,0025

Unint price for RES Levy (from 2017)	pf/kWh	KM/kWh
FB&H	0,20	0,001976
RS	0,44	0,0044

Income from levyy?	
RS	
FB&H	
B&H	

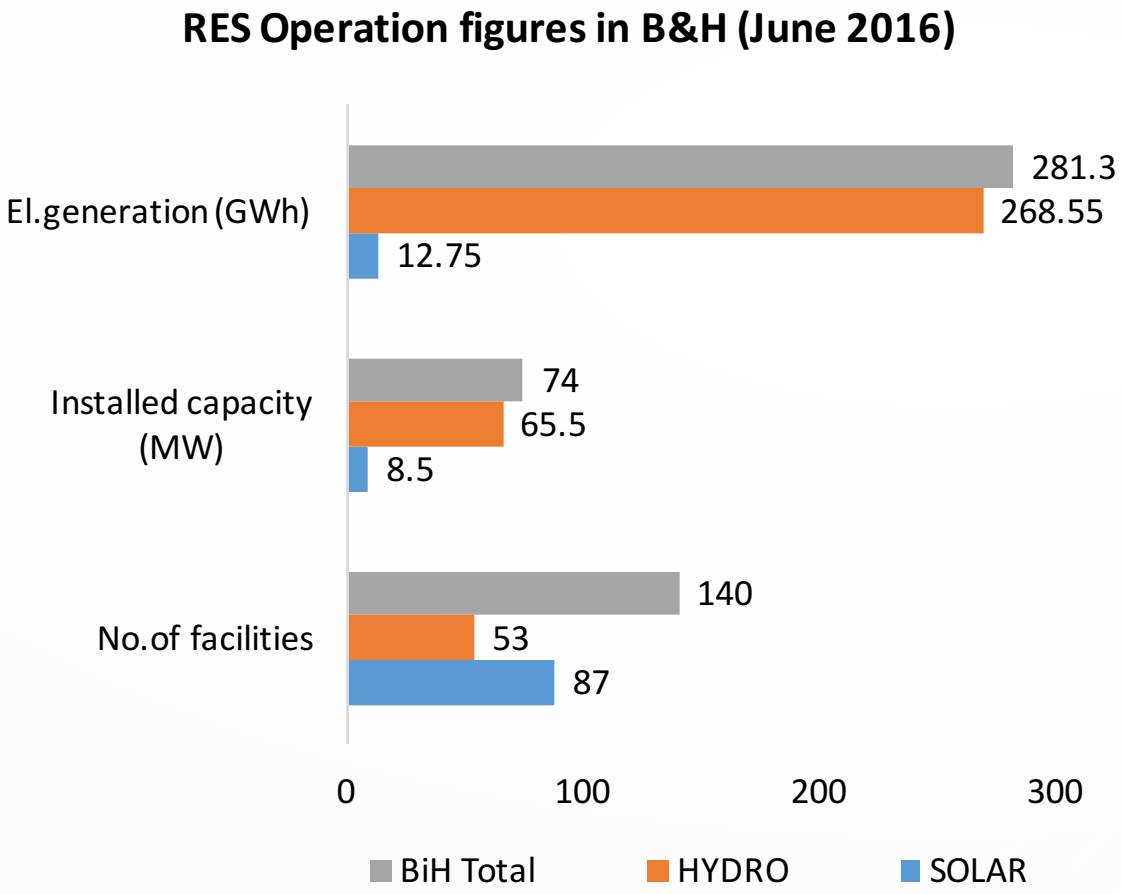


Cost for supportive part of the guaranteed prices to RES producers in FB&H for 2016:

8.594.064,19 KM

Soruce: FB&H Operator for RES & EC

RES in Operation *(June 2016)*



2020

Installed: **342,5 MW**

El.generation:

1116,7 GWh

Solar: **16,2 MW**

Hydro: **161,36 MW**

2016

Solar:

8,5 MW (52%)

Hydro:

65,5 MW (40%)

Achievements

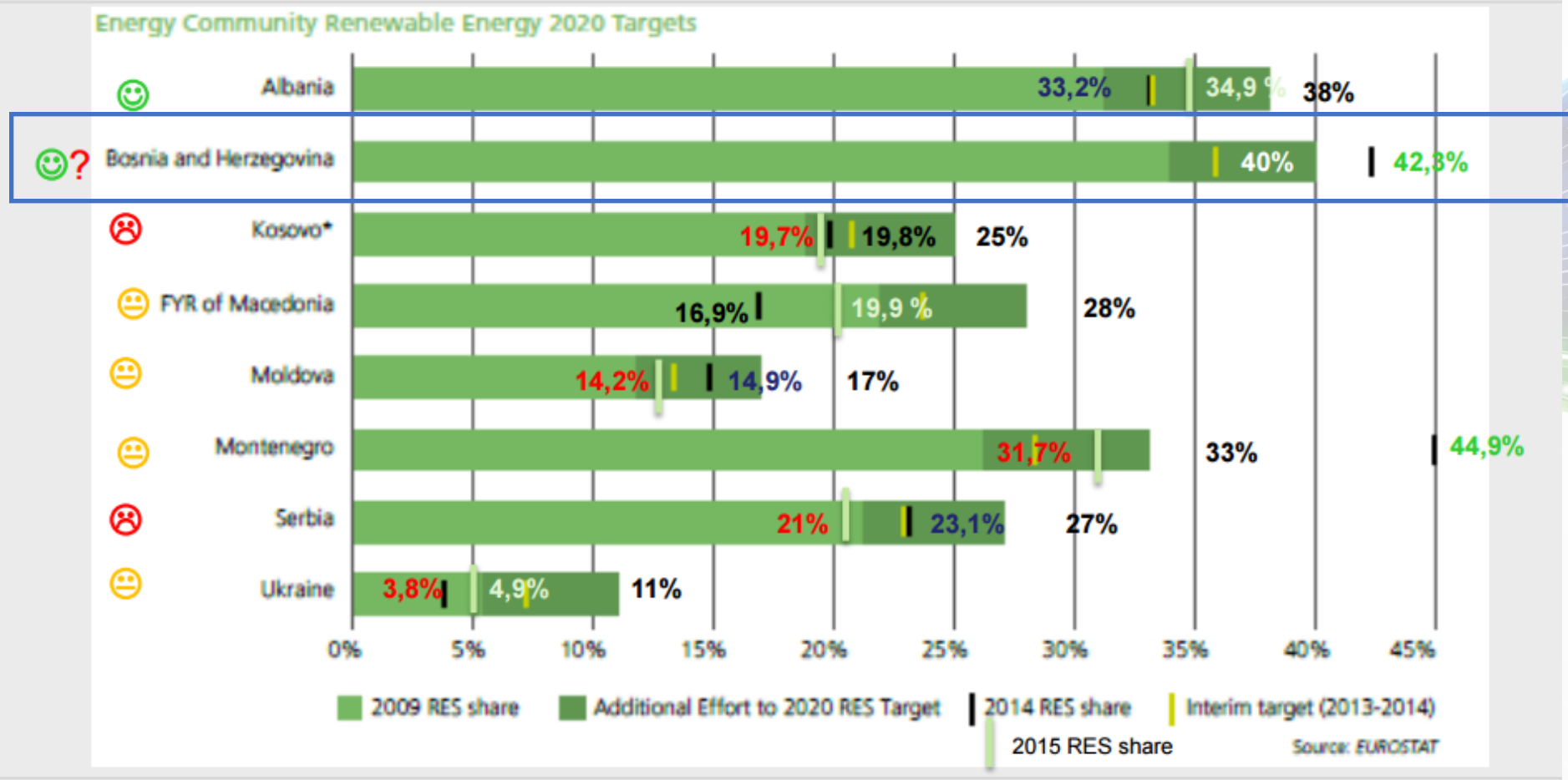
Total electcity generation from RES under FIT:

25 %

Estimation based on available data

Progress in the promotion of the use of energy from renewable sources – Second Progress Reports

Energy Community



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BIOENERGY?

- Support schemes (FiT) only for electricity

Type of power plant in accordance with type of energy source and installed capacity	**Guaranteed price (excl. VAT) KM/kWh**	Reference price (excl. VAT) KM/kWh
Biomass Power Plants		
Micro, up to 23 kW (incl.)	**0,31292**	0,105696
Mini, over 23 kW up to 150 kW (incl.)	**0,24987**	0,105696
Small, over 150 kW up to 1 MW (incl.)	**0,24067**	0,105696
Medium, over 1 MW up to 10 MW (incl.)	**0,22706**	0,105696
Biogas Power Plants		
Micro, up to 23 kW (incl.)	**0,91610**	0,105696
Mini, over 23 kW up to 150 kW (incl.)	**0,66637**	0,105696
Small, over 150 kW up to 1 MW (incl.)	**0,27891**	0,105696
Efficiency Cogeneration Plant		
Medium, up to 5 MW (incl.)	**0,15419**	0,105696

Federation B&H

- Support schemes (FiT, *FiP*) only for electricity

Type of power plant in relation to the type of energy source and installed capacity	Sale through mandatory purchase at guaranteed prices (excl. VAT)			Sale on the market and consumption for own purposes (excl. VAT)	
	Guaranteed price KM/kWh	**Reference price KM/kWh**	**Premium (in guaranteed price) KM/kWh**	**Reference price KM/kWh**	**Premium KM/kWh**
Biomass Power Plants					
Up to 1 MW incl.	**0,2413**	0,0541	0,1872	0,0829	0,1584
Over 1 MW up to 10 MW incl.	**0,2261**	0,0541	0,1720	0,0829	0,1432
Agricultural Biogas Power Plants					
Up to 1 MW incl.	**0,2402**	0,0541	0,1861	0,0829	0,1573
Conventional Energy Resources in an Efficient Cogeneration Plant					
New gas-fueled cogeneration plants up to 1 MW incl.	**0,2117**	0,0541	0,1576	0,0829	0,1288
New gas-fueled cogeneration plants From 1 MW up to 10 MW incl.	**0,1864**	0,0541	0,1323	0,0829	0,1035
New lignite-fueled cogeneration plants up to 1 MW incl.	**0,1197**	0,0541	0,0656	0,0829	0,0368
New lignite-fueled cogeneration plants over 1 MW up to 10 MW incl.	**0,0882**	0,0541	0,0341	0,0829	0,0053
Landfill gas in an Efficient Cogeneration Plant					
Up to 1 MW incl.	**0,0698**	0,0541	0,0157	0,0829	0
Over 1 MW up to 10 MW incl.	**0,0541**	0,0541	0	0,0829	0

Republika Srpska

Treći ENERGETSKI SAMIT u Bosni i Hercegovini

Overview – BIOENERGY Sector

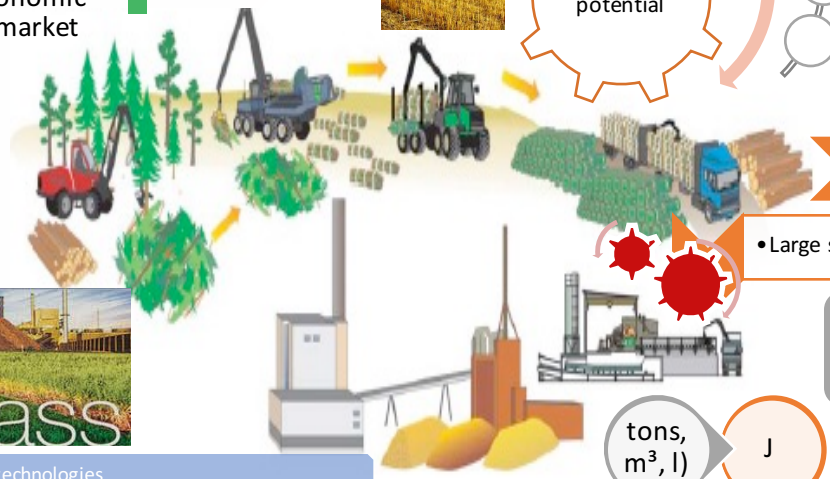
Potentials

Agriculture
Forestry
Environmental
Economic & market
Technical
Natural

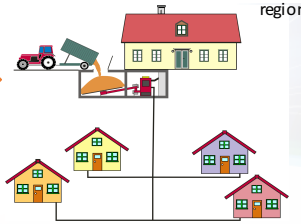
Processing potential

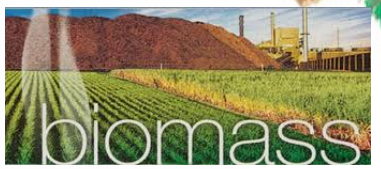
Wood&food processing industry
Biofuels producing
Free market

Potential regions
Tehnical regions
Administrative regions



Small scale utilization
• Large scale utilization





Market barriers

Business / financial models
Capital/ Budget
Grants
Commercial
ESCO
Community based models

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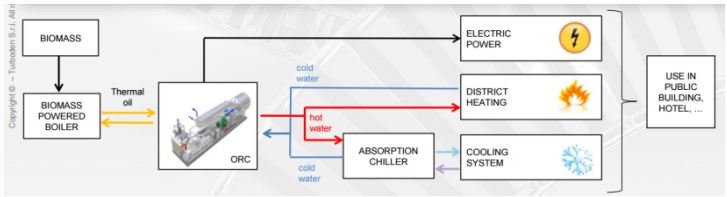
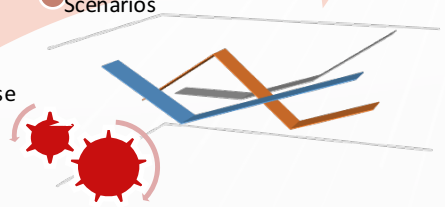
J
• Biofuels
• Energy

Institutional barriers

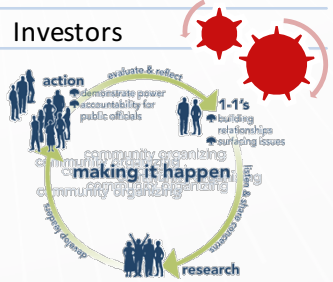
Innovative technologies



Supporting mechanism
Scenarios
Database



Stretegic approac h
Policy makers
Research institutions
Investors



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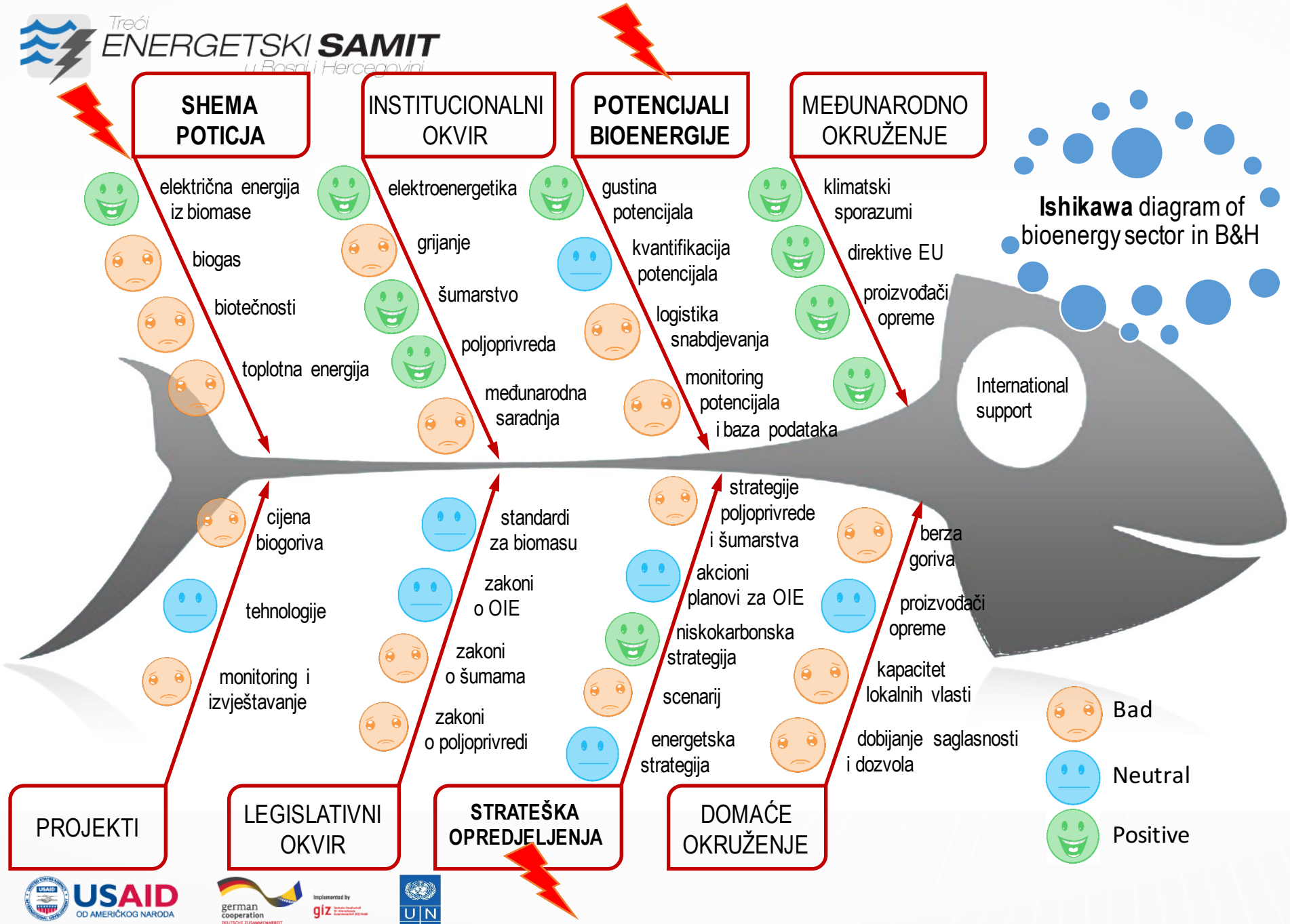

Ishikawa diagram of bioenergy sector in B&H

Napomena: sve kategorije su ocjenjene sa aspekta *bioenergije*, tako npr. zakoni o poljoprivredi su ocjenjeni sa loše jer ne tretiraju pitanja bioenergije

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PANEL

REGIONAL INVESTMENT CLIMATE FOR BIOENERGY PROJECT

Panelists:

- ***Zlatko Benković**, Ministry of Agriculture, Sector for Wood Industry, Croatia*
- ***Lin Herečić,** EKONERG, Croatia*
- ***Dušan Gvozdenac**, University of Novi Sad, Serbia*
- **Goran Mitrović,** Gold-MG Company, B&H

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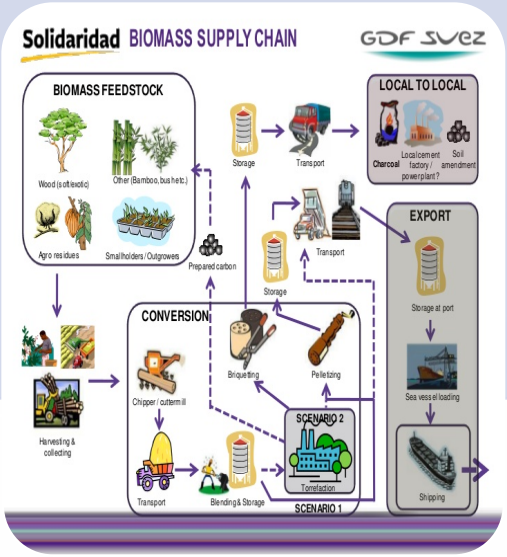
PANEL - *REGIONAL INVESTMENT CLIMATE FOR BIOENERGY PROJECT*



Strategic Planning

Mechanisms of incentives

Biomass supply chain

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